



Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

**APCL Analytical Report**

Submitted to:

SOTA Environmental

Attention: Yu Zeng

16835 W. Bernardo Dr, Ste. 212

San Diego CA 92127

Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-016435

Collected by:

Collected on: 10/15/01

Received: 10/15/01

Extracted: N/A

Tested: 10/16-18/01

Reported: 10/25/01

Sample Description: Water

Project Description: 00HW019 JPL

**Analysis of Water Samples**

Component Analyzed	Method	Unit	PQL	Analysis Result		
				ER-3 01-06435-1	MW-3-2 01-06435-2	MW-3-3 01-06435-3
Dilution Factor				1	1	1
Perchlorate	E314	µg/L	4	<4	<4	15.4
<b>Volatile Organic Compounds</b>						
Dilution Factor				1	1	1
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	<0.5	15.3
Chloroform	524.2	µg/L	0.5	<0.5	0.4J	24.5
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Methyl-t-Butyl ether (MTBE)	524.2	µg/L	1	-	0.7J	2
Tetrachloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Trichloroethene	524.2	µg/L	0.5	<0.5	<0.5	1.2
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5

Component Analyzed	Method	Unit	PQL	Analysis Result		
				MW-3-4 01-06435-4	MW-3-5 01-06435-5	TB-3 01-06435-6
Dilution Factor				1	1	1
Perchlorate	E314	µg/L	4	<4	<4	-
<b>Volatile Organic Compounds</b>						
Dilution Factor				1	1	1
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	-	<0.5
Chloroform	524.2	µg/L	0.5	0.3J	-	<0.5
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	-	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	-	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	-	<0.5
Methylene chloride	524.2	µg/L	1	-	-	2.2
Methyl-t-Butyl ether (MTBE)	524.2	µg/L	1	6.4	-	0.9J
Tetrachloroethene	524.2	µg/L	0.5	<0.5	-	<0.5
Toluene	524.2	µg/L	0.5	0.3J	-	-
Trichloroethene	524.2	µg/L	0.5	<0.5	-	<0.5
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	-	<0.5

# APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				ER-3	MW-3-2	MW-3-3	MW-3-4
				01-06435-1	01-06435-2	01-06435-3	01-06435-4
Chromium (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	<0.01

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

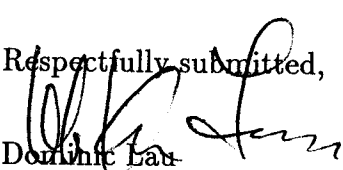
N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

  
Dominic Lau  
Laboratory Director  
Applied P & Ch Laboratory



Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

# APCL Analytical Report

Submitted to:

SOTA Environmental

Attention: Yu Zeng

16835 W. Bernardo Dr, Ste. 212

San Diego CA 92127

Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-016386

Collected by:

Collected on: 10/12/01

Received: 10/12/01

Extracted: N/A

Tested: 10/12-18/01

Reported: 10/19/01

Sample Description: Water

Project Description: 00HW019 JPL

## Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result		
				ER-17 01-06386-1	MW-17-2 01-06386-2	MW-17-3 01-06386-3
Dilution Factor				1	1	1
Perchlorate	E314	µg/L	4	<4	<4	7.3
<b>Volatile Organic Compounds</b>						
Dilution Factor				1	1	1
2-Butanone	524.2	µg/L	5	4J	-	-
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Chloroform	524.2	µg/L	0.5	<0.5	<0.5	1.4
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Tetrachloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Trichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5

Component Analyzed	Method	Unit	PQL	Analysis Result		
				MW-17-4 01-06386-4	MW-17-5 01-06386-5	TB-17 01-06386-6
Dilution Factor				1	1	1
Perchlorate	E314	µg/L	4	8.2	10.4	-
<b>Volatile Organic Compounds</b>						
Dilution Factor				1	1	1
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Chloroform	524.2	µg/L	0.5	1	1.2	<0.5
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Methylene chloride	524.2	µg/L	1	-	-	0.9J
Tetrachloroethene	524.2	µg/L	0.5	<0.5	0.4J	<0.5
Toluene	524.2	µg/L	0.5	0.9	0.7	-
Trichloroethene	524.2	µg/L	0.5	4.8	6.6	<0.5
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5

# APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				ER-17	MW-17-2	MW-17-3	MW-17-4
				01-06386-1	01-06386-2	01-06386-3	01-06386-4
Chromium (VI)	7196	mg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

  
Dominic Lau

Laboratory Director

Applied P & Ch Laboratory



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SOTA Environmental

Attention: Yu Zeng

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San Diego CA 92127

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# APCL Analytical Report

Service ID #: 801-016362

Collected by:

Collected on: 10/11/01

Received: 10/11/01

Extracted: N/A

Tested: 10/16-17/01

Reported: 10/19/01

Sample Description: Water

Project Description: 00HW019 JPL

## Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result		
				ER-19 01-06362-1	MW-19-1 01-06362-2	MW-19-2 01-06362-3
Dilution Factor				1	1	1
Perchlorate	E314	µg/L	4	<4	<4	<4
<b>Volatile Organic Compounds</b>						
Dilution Factor				1	1	1
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Chloroform	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Tetrachloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Trichloroethene	524.2	µg/L	0.5	<0.5	<0.5	0.5J
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-19-3 01-06362-4	MW-19-4 01-06362-5	MW-19-5 01-06362-6	TB-19 01-06362-7
Dilution Factor				1	1	1	1
Perchlorate	E314	µg/L	4	<4	<4	<4	-
<b>Volatile Organic Compounds</b>							
Dilution Factor				1	1	1	1
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	524.2	µg/L	0.5	<0.5	2.0	0.5J	<0.5
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	524.2	µg/L	1	-	-	-	2.2
Tetrachloroethene	524.2	µg/L	0.5	1.3	<0.5	0.9	<0.5
Trichloroethene	524.2	µg/L	0.5	0.5J	<0.5	<0.5	<0.5
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau

Laboratory Director

Applied P &amp; Ch Laboratory



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Attention: Yu Zeng

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**APCL Analytical Report**

Service ID #: 801-016324

Collected by:

Collected on: 10/10/01

Received: 10/10/01

Extracted: N/A

Tested: 10/11-16/01

Reported: 10/22/01

Sample Description: Water

Project Description: 00HW019 JPL

**Analysis of Water Samples**

Component Analyzed	Method	Unit	PQL	Analysis Result		
				ER-18 01-06324-1	MW-18-2 01-06324-2	MW-18-3 01-06324-3
Dilution Factor				1	1	1
Perchlorate	E314	µg/L	4	<4	<4	<4
<b>Volatile Organic Compounds</b>						
Dilution Factor				1	1	1
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	<0.5	1.0
Chloroform	524.2	µg/L	0.5	<0.5	<0.5	1.7
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Tetrachloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Trichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5

Component Analyzed	Method	Unit	PQL	Analysis Result		
				MW-18-4 01-06324-4	MW-18-5 01-06324-5	TB-18 01-06324-6
Dilution Factor				1	1	1
Perchlorate	E314	µg/L	4	20.3	<4	-
<b>Volatile Organic Compounds</b>						
Dilution Factor				1	1	1
Carbon tetrachloride	524.2	µg/L	0.5	4.7	<0.5	<0.5
Chloroform	524.2	µg/L	0.5	0.8	<0.5	<0.5
1,1-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5
Methylene chloride	524.2	µg/L	1	-	-	2.3
Tetrachloroethene	524.2	µg/L	0.5	2.1	<0.5	<0.5
Trichloroethene	524.2	µg/L	0.5	1.5	<0.5	<0.5
1,1,2-Trichlorotrifluoroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5

# APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				ER-18 01-06324-1	MW-18-2 01-06324-2	MW-18-3 01-06324-3	MW-18-4 01-06324-4
Chromium (VI)	7196	mg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

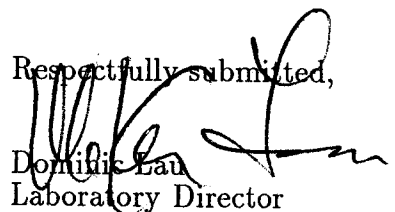
N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

  
Dominic Lau  
Laboratory Director  
Applied P & Ch Laboratory



November 14, 2001

Kenny Chan  
Applied P & Ch Laboratories  
13760 E. Magnolia Ave.  
Chino, CA 91710  
TEL: (909) 590-1828  
FAX (909) 590-1498

ELAP No: 1838

RE: JPL

Work Order No.: 053830

Attention: Kenny Chan

Enclosed are the results for sample(s) received on November 07, 2001 by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,



Edgar Caballero  
Laboratory Director

This cover letter is an integral part of this analytical report.



**APCL Project: JPL**

**ATL #: 053830-001A / 033A**

**APCL #: 6611-1 / 33**

0001



*Advanced Technology  
Laboratories*

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

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APCL #: 6611-1 /33

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## Case Narrative

**Client:** Applied P & Ch Laboratory  
**Attn:** Mr. Jim Lin  
**Client's Project:** JPL

**ATL Number:** 053830-001A / 033A  
**Date Received:** 11/7/01

Advanced Technology Laboratories received 33 water sample(s) (including field samples) for sample analysis. All receiving information is located on the Chain-of-Custody, which has been included in the data package.

Table's 1a/1b describe in detail the individual sample information. Table 2 describes some important information associated with the sample batch.

Table 1a: Sample Description

Lab Sample ID	Client Sample ID	Sample Description	Matrix
053830-001A	6611-24	MW-18-4	Water
053830-002A	6611-23	MW-18-3	Water
053830-003A	6611-22	MW-18-2	Water
053830-004A	6611-5	ER-18	Water
053830-005A	6611-21	MW-17-4	Water
053830-006A	6611-20	MW-17-3	Water
053830-007A	6611-19	MW-17-2	Water
053830-008A	6611-4	ER-17	Water
053830-009A	6611-10	MW-3-4	Water
053830-010A	6611-9	MW-3-3	Water
053830-011A	6611-8	MW-3-2	Water
053830-012A	6611-1	ER-3	Water
053830-013A	6611-29	MW-20-5	Water
053830-014A	6611-28	MW-20-4	Water
053830-015A	6611-27	MW-20-3	Water
053830-016A	6611-26	MW-20-2	Water
053830-017A	6611-25	MW-20-1	Water
053830-018A	6611-6	ER-20	Water
053830-019A	6611-33	MW-4-5	Water
053830-020A	6611-32	MW-4-4	Water
053830-021A	6611-13	MW-4-3	Water
053830-022A	6611-12	MW-4-2	Water
053830-023A	6611-11	MW-4-1	Water
053830-024A	6611-14	MW-4-1D	Water
053830-025A	6611-2	ER-4	Water
053830-026A	6611-31	MW-22-2	Water
053830-027A	6611-30	MW-22-1	Water

003



Table 1b: Sample Description

Lab Sample ID	Client Sample ID	Sample Description	Matrix
053830-028A	6611-7	ER-22	Water
053830-029A	6611-18	MW-14-4	Water
053830-030A	6611-17	MW-14-3	Water
053830-031A	6611-16	MW-14-2	Water
053830-032A	6611-15	MW-14-1	Water
053830-033A	6611-3	ER-14	Water

Table 2: Sample Batch Information

Test Name	Analysis Method	QC Batch Number	Associated Samples	Analysis Date
ICP_MS Metals	EPA 200.8	6449	053830-001A / 019A, 053830-022A	11/12/01
		6450	053830-020A / 021A, 053830-023A/ 033A	11/12/01

ATL samples 053830-001A / 033A did not require digestion. The Prep Date on the report is the analytical date of the turbidity check.

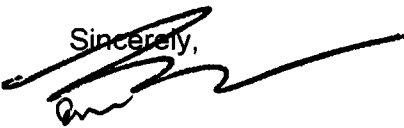
Table 3: QC Anomalies

Item	Cause/Reason
None	

The client requested a Level "D" data package requirement. The QC anomalies, which are listed in Table 3, appear to not have any significant impact on the analytical results. See cause and reasons for each anomaly that is listed in the table.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (562) 989-4045 if I can be of further assistance to your company.

Sincerely,

  
Edgar P. Caballero  
Laboratory Director

004



## Data Qualifiers

Data Qualifiers are used in conjunction with the results in order to explain certain anomalies which may have occurred during sample analysis. If a result data qualifier is reported, then an explanation of the occurrence and the effects it has on the results must accompany the report.

The following table describes each data qualifier:

Symbol	Definition
<b>B</b>	This flag is used when the analyte is found in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag shall be used for a tentatively identified compound as well as for a positively identified target compounds.
<b>D</b>	Duplicate injection precision not met.
<b>E</b>	The reported value is estimated because of interference.
<b>J</b>	This indicates an estimated value. This flag is used (1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL but greater than zero, (3) when the retention time data indicate the presence of a compound that meets the pesticide/Aroclor identification criteria, and the result is less than the CRQL but greater than zero.
<b>N</b>	This flag indicated presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N flag is not used.
<b>S</b>	Spike sample recovery not within control limits.
<b>SA</b>	The reported value was determined by the Method of Standard Additions (MSA).
<b>U</b>	This flag indicates the compound was analyzed for but not detected. The CRQL shall be adjusted accordingly.
<b>W</b>	Post Digestion Spike for Furnace AA analysis is out of control limits (85% - 115%), while sample absorbance is less than 50% of spike absorbance.
<b>X</b>	This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported and flagged with an X.
<b>Y</b>	This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag.
<b>P</b>	Samples analyzed by ICP
<b>PM</b>	Samples analyzed by ICP_MS
<b>CV</b>	Samples analyzed by Manual Cold Vapor AA
<b>CA</b>	Samples analyzed by Midi-Distillation Spectrophotometer
<b>SP</b>	Samples analyzed by Spectrophotometer
<b>TR</b>	Samples analyzed by Infrared (TRPH)
<b>AA</b>	Samples analyzed by Flame, Atomic Absorption
<b>M</b>	Method Qualifier: Indicates the method by which each analyte is analyzed.
<b>Q</b>	Data Qualifier: Indicates any anomalies occurred during the QC sample analysis.
<b>C</b>	Concentration Qualifier: Indicates any effect on the reported value.
<b>DLR</b>	The DLR takes into account the dilution or concentration of the sample and is numerically defined as the MDL times the dilution or concentration factor. The dilution and concentration factors vary according to aliquot normally taken by the individual laboratory.
<b>NC</b>	Not calculated; at or near detection limit.



## Sample Receiving Items

006



*Advanced Technology  
Laboratories*

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

APCL

Applied P & Ch Laboratory  
13760 E. Magnolia Ave., Chino CA 91710  
Tel: (909) 590-1828 Fax: (909) 590-1498

## Subcontract Chain of Custody

Please Print in pen  
Page 1 of 2

TO: Advanced Technology Laboratories

Address 1500 E 33rd Street

APCL Project Title/Code JPL

Bill to (if different from above) APCL

Due date ☒ regular ☐ rush

Contact Bing Rachelle

City Signal Hill

Sampler

Quotation #

Client signature Contact: Kenny Chan

Tel: (562) 989-4045 Fax: (562) 989-4040

State CA

Zip code 90807

Sample disposition: Date

☐ client; ☐ APCL

P.O.#

Date 10/26/01

Sample Description	ID	Date Time Collected	Matrix	Pres. Y/N	Filtered Y/N	Analysis items	Unit Price*	APCL Lab-ID
MW-18-4		10/10/01 1150	W	HNO <sub>3</sub>	N			
MW-18-3		1232						
MW-18-2		1259						
ER-18		1245				Total Cr by 200.8		6611-24
MW-17-4		10/12/01 1040						-23
MW-17-3		1110						-22
MW-17-2		1140				With EDD & Level 4 Package		-5
ER-17		1025						-21
MW-3-4		10/15/01 1145						-20
MW-3-3		1220						-19
MW-3-2		1250						-4
ER-3		1140						-10
MW-20-5		10/17/01 1058						-9
MW-20-4		1140						-8
MW-20-3		1222						-1
MW-20-2		1255						-29
MW-20-1		1335						-28
ER-20		1205						-27
								-26
								-25
								-6

Sample Conditions: Seal ☒ Intact ☐ Broken ☐ None; Temperature ☒ Cold ☐ Room; Other

Relinquished by

Date/Time 11/7/01 1200pm Received by

Relinquished by

Date/Time 11/7/01 2:16pm Received by

Relinquished by

Date/Time Received by

Relinquished by

Date/Time Received by

Relinquished by

Date/Time Received by

Relinquished by

Date/Time Received by

Relinquished by

Date/Time Received by

Relinquished by

Date/Time Received by

\* APCL must be notified if unit price is incorrect.



# Advanced Technology Laboratories

## Sample Receipt Checklist

Client Name APCL

Date and Time Received: 11/7/01 3:20:01 PM

Work Order Number 053830

Received by: CC

Checklist completed by

Signature

Date

Reviewed by:

Initials

Date

Cooler Temp (Deg C): 4.7

Carrier name: Walk-In

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/> (Soil/Oils/Liquid)

pH >12 for (CN ,S) ; pH <2 for (OG, 418.1 and Metal)

Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No and/or NA (not applicable) response must be detailed in the comments section be

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

009

# pH Logbook - Sample Control

Date: 11/20/01

Analyst: MAC

Standard	Std ID	pH	Comments
Buffer 4			} by pH strip
Buffer 10			
Buffer 7 (Check)			
			Acceptance Range: 6.9 - 7.1

Sample ID	Matrix	pH	Comments
1 053830-001A	H <sub>2</sub> O	2	} by strip
2 m2A		2	
3 m3A		2	
4 m4A		2	
5 m5A		2	
6 m6A		2	
7 m7A		2	
8 m8A		2	
9 m9A		2	
10 ✓ m10A	✓	2	
Dup			Accept: 10% water, 20% soil
Buffer 4, 7, 10			Accept: +/-0.1 pH units from expected value
(Circle one)			

Date: 11/20/01

Analyst: MAC

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 10			
Buffer 7 (check)			Acceptance Range: 6.9 - 7.1

Sample ID	Matrix	pH	Comments
1 053830-011A	H <sub>2</sub> O		} by strip
2 012A		2	
3 013A		2	
4 014A		2	
5 015A		2	
6 016A		2	
7 017A		2	
8 018A		2	
9 019A		2	
10 ✓ 020A	✓	2	
Dup			Accept: 10% water, 20% soil
Buffer 4, 7, 10			Accept: +/-0.1 pH units from expected value
(Circle one)			

Supervisor's Approval/Date: \_\_\_\_\_

ATL Logbook #9

Page: 24 of 100 010

# pH Logbook - Sample Control

Date: 11/20/01

Analyst: AAK

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 10			
Buffer 7 (Check)			Acceptance Range: 6.9 - 7.1

Sample ID	Matrix	pH	Comments
1 053830 - 021A	H <sub>2</sub> O	2	} by strip
2 022A		2	
3 023A		2	
4 024A		2	
5 025A		2	
6 026A		2	
7 027A		2	
8 028A		2	
9 029A		2	
10 030A		2	
Dup			Accept: 10% water, 20% soil
Buffer 4, 7, 10			Accept: +/-0.1 pH units from expected value

(Circle one)

Date: 11/20/01

Analyst: AAK

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 10			
Buffer 7 (check)			Acceptance Range: 6.9 - 7.1

Sample ID	Matrix	pH	Comments
1 053830 - 031A	H <sub>2</sub> O	2	} by strip
2 032A		2	
3 033A		2	
4			
5			
6			
7			
8			
9			
10			
Dup			Accept: 10% water, 20% soil
Buffer 4, 7, 10			Accept: +/-0.1 pH units from expected value

(Circle one)

ATL Logbook #9

Supervisor's Approval/Date: \_\_\_\_\_

Page: 25 of 100

011

## INORGANICS COMPLETE INVENTORY SHEET

Client: Applied P & Ch Laboratory  
Attn: Mr. Jim Lin  
Client's Project: JPL

Laboratory Name: Advanced Technology Laboratories  
Laboratory Address: 3275 Walnut Avenue, Signal Hill, CA 90807

ATL Number: 053830-001A / 033A  
Date Sampled: 10/10 – 10/22/01  
Date Received: 11/7/01

### Method 200.8 (Metals)

	Topic	Page(s)
Sample Data	Inorganic Data Result Sheet	
Standards Data	Initial Calibration	
	Initial Calibration Verification and Continuing Calibration Verification/External Reference Standard	
	Tune File	
	Internal Standard Table	
Raw QC Data	Blank Report Sheet	
	Spike Sample Recovery	
	Laboratory Control Spike Report	
	Duplicate Report Sheet	
	Holding Times Summary Sheet	
Miscellaneous Items	Preparation Log	
	Analysis Run Log	
	Standards Log	
	List of Instrument Detection Limits	
Raw Data Package	Standards Data Sample Data QC Data	



**Advanced Technology Laboratories**

Print Date: 11/14/01

CLIENT: Applied P &amp; Ch Laboratories

Client Sample ID MW-18-4

Lab Order: 053830

Project: JPL

Collection Date: 10/10/01 11:50:00 AM

Lab ID: 053830-001A

Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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## ICP-MS METALS

## EPA 200.8

RunID: ICP4\_011112A

BatchID: 6449

PrepDate: 11/12/01

Analyst: NS

Chromium

7.1

1.0

µg/L

1.0

11/12/01

## Qualifiers

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: RA

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Advanced Technology  
Laboratories

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013

# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories

Client Sample ID MW-18-3

Lab Order: 053830

Project: JPL

Collection Date: 10/10/01 12:32:00 PM

Lab ID: 053830-002A

Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		EPA 200.8				
RunID: ICP4_011112A	BatchID: 6449	PrepDate: 11/12/01 Analyst: NS				
Chromium	7.7	1.0		µg/L	1.0	11/12/01

Qualifiers ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA

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**Advanced Technology Laboratories**

Print Date: 11/14/01

CLIENT: Applied P &amp; Ch Laboratories

Client Sample ID MW-18-2

Lab Order: 053830

Project: JPL

Collection Date: 10/10/01 12:59:00 PM

Lab ID: 053830-003A

Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		EPA 200.8				
RunID: ICP4_011112A	BatchID: 6449	PrepDate: 11/12/01 Analyst: NS				
Chromium	4.3	1.0		µg/L	1.0	11/12/01

**Qualifiers** ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA

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**015<sup>3</sup>**

# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories Client Sample ID ER-18  
Lab Order: 053830  
Project: JPL Collection Date: 10/10/01 12:45:00 PM  
Lab ID: 053830-004A Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		EPA 200.8				
RunID: ICP4_011112A	BatchID: 6449	PrepDate: 11/12/01 Analyst: NS				
Chromium	ND	1.0		µg/L	1.0	11/12/01

Qualifiers ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA



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016<sup>4</sup>

# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories  
Lab Order: 053830  
Project: JPL  
Lab ID: 053830-005A

Client Sample ID MW-17-4  
Collection Date: 10/12/01 10:40:00 AM  
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>ICP-MS METALS</b>						
RunID: ICP4_011112A			BatchID: 6449		EPA 200.8	
Chromium			5.7		PrepDate: 11/12/01	
			1.0		Analyst: NS	
			µg/L		1.0	
					11/12/01	

Qualifiers ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA

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# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories

Client Sample ID MW-17-3

Lab Order: 053830

Project: JPL

Collection Date: 10/12/01 11:10:00 AM

Lab ID: 053830-006A

Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		EPA 200.8				
RunID: ICP4_011112A	BatchID: 6449	PrepDate: 11/12/01 Analyst: NS				
Chromium	6.3	1.0		µg/L	1.0	11/12/01

Qualifiers ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA  
018



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# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories  
Lab Order: 053830  
Project: JPL  
Lab ID: 053830-007A

Client Sample ID MW-17-2  
Collection Date: 10/12/01 11:40:00 AM  
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>ICP-MS METALS</b>						
RunID: ICP4_011112A	BatchID: 6449	EPA 200.8		PrepDate: 11/12/01	Analyst: NS	
Chromium	5.0	1.0		µg/L	1.0	11/12/01

Qualifiers ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA



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019

**Advanced Technology Laboratories**

Print Date: 11/14/01

CLIENT: Applied P &amp; Ch Laboratories

Client Sample ID ER-17

Lab Order: 053830

Project: JPL

Collection Date: 10/12/01 10:25:00 AM

Lab ID: 053830-008A

Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		EPA 200.8				
RunID: ICP4_011112A	BatchID: 6449	PrepDate: 11/12/01 Analyst: NS				
Chromium	ND	1.0		µg/L	1.0	11/12/01

**Qualifiers** ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA

020



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# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories

Client Sample ID MW-3-4

Lab Order: 053830

Project: JPL

Collection Date: 10/15/01 11:45:00 AM

Lab ID: 053830-009A

Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		EPA 200.8				
RunID: ICP4_011112A	BatchID: 6449	PrepDate: 11/12/01 Analyst: NS				
Chromium	4.9	1.0		µg/L	1.0	11/12/01

Qualifiers ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA

021



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# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories Client Sample ID MW-3-3  
Lab Order: 053830  
Project: JPL Collection Date: 10/15/01 12:20:00 PM  
Lab ID: 053830-010A Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>ICP-MS METALS</b>						
RunID: ICP4_011112A			BatchID: 6449		EPA 200.8	
PrepDate: 11/12/01			Analyst: NS			
Chromium	3.3	1.0		µg/L	1.0	11/12/01

Qualifiers ND - Not Detected at the Reporting Limit S - Spike/Surrogate outside of limits due to matrix interference.  
J - Analyte detected below quantitation limits H - Samples exceeding analytical holding time  
B - Analyte detected in the associated Method Blank E - Value above quantitation range  
DO - Surrogate Diluted Out M - Not Monitored. Highly Reactive

Initials: KA

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# Advanced Technology Laboratories

Print Date: 11/14/01

CLIENT: Applied P & Ch Laboratories

Client Sample ID MW-3-2

Lab Order: 053830

Project: JPL

Collection Date: 10/15/01 12:50:00 PM

Lab ID: 053830-011A

Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		EPA 200.8				
RunID: ICP4_011112A	BatchID: 6449	PrepDate: 11/12/01 Analyst: NS				
Chromium	5.6	1.0		µg/L	1.0	11/12/01

Qualifiers ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.  
H - Samples exceeding analytical holding time  
E - Value above quantitation range  
M - Not Monitored. Highly Reactive

Initials: RA



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